

Application No.: 10/608,671

Amendments to the Claims

Please replace the present claims with the following amended set of claims.

Listing of Claims:

1. (Currently Amended) A microfluidic device for assaying a liquid biological sample of 20 μ L or less comprising:

(a) an inlet port for receiving said sample;

(b) an enclosed unidirectional capillary passageway in fluid communication with said inlet port;

(c) an enclosed inlet chamber containing at least one reagent disposed on a substrate for reacting with said sample, said inlet chamber being in fluid communication at one side thereof with the enclosed unidirectional capillary passageway of (b), thereby providing said sample an entry into said enclosed inlet chamber, said enclosed inlet chamber containing at least one groove or at least one weir extending across said inlet chamber and a microstructure comprising a uniform array of posts disposed to force said sample to change direction as it passes through said array of posts across said chamber, said array of posts disposed to provide lower capillary force in said chamber relative to capillary force said capillary passageway, said substrate disposed adjacent to said uniform array of posts; and

(d) at least one vent passageway for removing air displaced by said liquid sample at a side of said enclosed inlet chamber opposite the entry of said capillary passageway.

2. (Canceled).

3. (Canceled).

4. (Previously Presented) A microfluidic device of Claim 1 wherein said at least one groove or at least one weir contains wedge-shaped cutouts to facilitate uniform flow of said sample.

5. (Canceled)

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6. (Currently Amended) A microfluidic device of Claim 1 wherein said posts contain wedge-shaped cutouts positioned 90 degrees from the direction of ~~to facilitate uniform~~ flow of said sample.

7. (Original) A microfluidic device of Claim 1 wherein said inlet port is tapered to engage the corresponding shape of a pipette for depositing said sample

8. (Cancelled)

9. (Original) A microfluidic device of Claim 1 further comprising an overflow chamber in fluid communication with said inlet chamber, said overflow chamber for receiving said sample in excess of the amount needed to fill said inlet chamber.

10. (Original) A microfluidic device of Claim 9 wherein said overflow chamber contains an indicator to detect the presence of excess of said sample.

11. (Cancelled).

12. (Cancelled).

13. (Cancelled).